

WHAT IS CLAIMED IS:

1           1. In a wireless mesh network having a first node,  
2 identified by a first identifier, and at least a second node  
3 identified by a second identifier, the first node having a first  
4 antenna transducer assembly at which to transduce a data packet  
5 communicated between the first and the least second nodes, the data  
6 packet including values of at least a selected one of the first and  
7 second identifiers, an improvement of apparatus for facilitating  
8 indication of antenna transducer-related information by which to  
9 direct operation of the first antenna transducer assembly to  
10 efficiently communicate the data packet between the first and at  
11 least second nodes, said apparatus comprising:

12           a mapper coupled to receive an indication of the values  
13 of the selected one of the first and second identifiers included to  
14 form a portion of the data packet, said mapper for mapping the  
15 values of the selected one of the first and second identifiers to  
16 mapped values, the mapped values including values representative of  
17 the antenna transducer-related information, and for incorporating  
18 the mapped values into the data packet, thereby to identify in the  
19 data packet the antenna transducer-related information by which to  
20 direct operation of the first antenna transducer assembly.

1           2.    The apparatus of claim 1 wherein the first node comprises  
2   a first wireless router and wherein said mapper forms a portion of  
3   the first wireless router.

1           3.    The apparatus of claim 1 wherein the second node  
2   comprises a second wireless router and wherein said mapper forms a  
3   portion of the second wireless router.

1           4.    The apparatus of claim 1 wherein the wireless mesh  
2   network is operable pursuant to an IP (internet protocol) protocol,  
3   wherein the first identifier comprises a first IP address, wherein  
4   the second identifier comprises a second IP address, and wherein  
5   said mapper maps values of the selected one of the first and second  
6   IP address to the mapped values, the mapped values including both  
7   the values of the selected one of the first and second IP addresses  
8   and the values representative of the antenna transducer-related  
9   information.

1           5.    The apparatus of claim 4 wherein the first node includes  
2   a first IP routing table and wherein said mapper forms a portion of  
3   the IP routing table.

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1           6.    The apparatus of claim 5 wherein the first IP routing  
2 table of which said mapper forms a portion relates the selected one  
3 of the first and second IP addresses to the values representative  
4 of the antenna transducer-related information.

1           7.    The apparatus of claim 1 wherein the first node is  
2 defined in terms of logical layers having a physical layer and  
3 upper level layers defined thereabove and wherein said mapper is  
4 formed at a selected upper level layer of the upper level layers  
5 defined above the physical layer.

1           8.    The apparatus of claim 1 wherein the first antenna  
2 transducer assembly comprises a first-sector antenna transducer  
3 capable of exhibiting at least a first radiation pattern in a first  
4 radially-extending sector and wherein the mapped values into which  
5 the selected one of the first and second identifiers are mapped by  
6 said mapper include indications of which of the first-sector and  
7 second-sector antennas are to be used to transduce the data packet.

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1        9.    The apparatus of claim 1 wherein the first antenna  
2 transducer assembly comprises a first antenna transducer to which a  
3 first selected weighting factor can be applied and a second antenna  
4 transducer to which a second selected weighting factor can be  
5 applied and wherein the mapped values into which the selected one  
6 of the first and second identifiers are mapped by said mapper  
7 include indications of the first and second weighting factors,  
8 respectively, to be applied to the first and second antenna  
9 transducers, respectively.

1        10.   The apparatus of claim 1 wherein the first antenna  
2 transducer assembly comprises a steerable beam antenna transducer  
3 steerable towards a selected radiation-pattern angle and wherein  
4 the mapped values into which the selected one of the first and  
5 second identifiers are mapped by said mapper include indications of  
6 the selected radiation pattern angle into which the steerable beam  
7 antenna transducer is to be steered.

1        11.   The apparatus of claim 1 wherein the antenna transducer-  
2 related information, of which the mapped values formed by said  
3 mapper include as portions thereof, is calculated responsive to  
4 transmission of training signals communicated between the first and  
5 at least second nodes.

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12. In a method for communicating in a wireless mesh network having a first node, identified by a first identifier, and at least a second node, identified by at least a second identifier, the first node having a first antenna transducer assembly at which to transduce a data packet communicated between the first and at least second nodes, the data packet including values of at least a selected one of the first and second identifiers, an improvement of a method for facilitating indications of antenna transducer-related information by which to direct operation of the first antenna transducer assembly to efficiently communicate the communication signals between the first and at least second nodes, said method comprising:

detecting indications of the values of the selected one of the first and second identifiers included to form a portion of the data packet;

mapping the indications detected during said operation of detecting to mapped values, the mapped values including values representative of the antenna transducer-related information; and

incorporating the mapped values, formed during said operation of mapping, into the data packet, thereby to identify in the data packet the antenna transducer-related information by which to direct operation of the first antenna transducer assembly.

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method

1 13. The ~~apparatus~~ of claim 12 wherein the first node  
2 comprises a wireless router and wherein said method comprises the  
3 additional operation, prior to said operation of detecting, of  
4 providing the data packet to the wireless router.

1 14. The method of claim 13 wherein said operations of  
2 detecting, mapping, and incorporating are performed at the wireless  
3 router.

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1 15. The method of claim 12 wherein the wireless mesh network  
2 is operable pursuant to an IP (internet protocol) protocol, wherein  
3 the first identifier comprises a first IP address, wherein the  
4 second identifier comprises a second IP address, and wherein said  
5 operation of mapping comprises mapping indications of values of the  
6 selected one of the first and second IP addresses to the mapped  
7 values.

1 16. The method of claim 15 wherein the first node includes a  
2 first IP routing table and wherein said operation of mapping said  
3 operation of mapping is performed at the IP routing table.

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1           17. The method of claim 12 wherein the first node is defined  
2 in terms of logical layers having a physical layer and upper level  
3 layers defined thereabove and wherein said operation of mapping is  
4 performed at a selected upper level layer of the upper level  
5 layers.

1           18. The method of claim 12 further comprising the operation  
2 prior to said operation of detecting, of selecting the antenna  
3 transducer related information.

1           19. The method of claim 18 further comprising the operation,  
2 prior to said operation of selecting, of sending a training  
3 sequence between the first and second nodes and wherein said  
4 operation of selecting is performed responsive to analysis of the  
5 training sequence.

1           20. The method of Claim 12 further comprising the operation  
2 of using the mapped values incorporated into the data packet to  
3 select operation of the first antenna transducer assembly.